

**Amendments to the Claims:**

The following listing of claims will replace all prior versions and listings of claims.

**Listing of Claims**

1-12. (canceled)

13. (currently amended) An isolated antibody that binds specifically to the isolated polypeptide protein of claim 11 22.

14-21. (canceled)

22. (new) An isolated protein comprising an amino acid sequence selected from the group consisting of:

- (a) amino acid residues 1 to 359 of SEQ ID NO:4; and
- (b) amino acid residues 2 to 359 of SEQ ID NO:4.

23. (new) The protein of claim 22, wherein the amino acid sequence is (a).

24. (new) The protein of claim 22, wherein the amino acid sequence is (b).

25. (new) The protein of claim 22 wherein the amino acid sequence further comprises a heterologous polypeptide.

26. (new) The protein of claim 22 wherein said protein is glycosylated.

27. (new) The protein of claim 22 wherein said protein is fused to polyethylene glycol.

28. (new) An isolated protein produced by a method comprising:

- (a) expressing the protein of claim 22 in a recombinant host cell comprising a nucleic acid molecule encoding said protein; and
- (b) recovering the protein from the cell culture.

29. (new) A composition comprising the protein of claim 22 and a carrier.

30. (new) An isolated protein comprising an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of the full-length Sialic Acid Synthetase polypeptide encoded by the HA5AA37 cDNA clone contained in ATCC Deposit No. PTA-1410; and

(b) the amino acid sequence of the full-length Sialic Acid Synthetase polypeptide, excluding the N-terminal methionine residue, encoded by the HA5AA37 cDNA clone contained in ATCC Deposit No. PTA-1410.

31. (new) The protein of claim 30, wherein the amino acid sequence is (a).

32. (new) The protein of claim 30, wherein the amino acid sequence is (b).

33. (new) The protein of claim 30 wherein the amino acid sequence further comprises a heterologous polypeptide.

34. (new) The protein of claim 30 wherein said protein is glycosylated.

35. (new) The protein of claim 30 wherein said protein is fused to polyethylene glycol.

36. (new) An isolated protein produced by a method comprising:

(a) expressing the protein of claim 30 in a recombinant host cell comprising a nucleic acid molecule encoding said protein; and

(b) recovering the protein from the cell culture.

37. (new) A composition comprising the protein of claim 30 and a carrier.

38. (new) An isolated polypeptide consisting of a fragment of SEQ ID NO:4, wherein said fragment is at least 30 contiguous amino acid residues in length.

39. (new) The polypeptide of claim 38 wherein the fragment is at least 50 contiguous amino acid residues in length.

40. (new) The polypeptide of claim 38 fused to a heterologous polypeptide.

41. (new) The polypeptide of claim 38 wherein said protein is glycosylated.

42. (new) The polypeptide of claim 38 wherein said protein is fused to polyethylene glycol.

43. (new) An isolated polypeptide produced by a method comprising:

(a) expressing the polypeptide of claim 38 in a recombinant host cell comprising a nucleic acid molecule encoding said polypeptide; and

(b) recovering the polypeptide from the cell culture.

44. (new) A composition comprising the polypeptide of claim 38 and a carrier.

45. (new) An isolated polypeptide consisting of a fragment of the full-length Sialic Acid Synthetase polypeptide encoded by the HA5AA37 cDNA clone contained in ATCC Deposit No. PTA-1410, wherein said fragment is at least 30 contiguous amino acid residues in length.

46. (new) The polypeptide of claim 45 wherein the fragment is at least 50 contiguous amino acid residues in length.

47. (new) The polypeptide of claim 45 fused to a heterologous polypeptide.

48. (new) The polypeptide of claim 45 wherein said polypeptide is glycosylated.

49. (new) The polypeptide of claim 45 wherein said polypeptide is fused to polyethylene glycol.

50. (new) An isolated polypeptide produced by a method comprising:

(a) expressing the polypeptide of claim 45 in a recombinant host cell comprising a nucleic acid molecule encoding said polypeptide; and

(b) recovering the polypeptide from the cell culture.

51. (new) A composition comprising the polypeptide of claim 45 and a carrier.

52. (new) An isolated polypeptide consisting of a fragment of the polypeptide of SEQ ID NO:4 with sialic acid synthetase activity.

53. (new) The polypeptide of claim 52 wherein the polypeptide is fused to a heterologous polypeptide.

54. (new) The polypeptide of claim 52 wherein said protein is glycosylated.

55. (new) The polypeptide of claim 52 wherein said polypeptide is fused to polyethylene glycol.

56. (new) An isolated polypeptide produced by a method comprising:

(a) expressing the polypeptide of claim 52 in a recombinant host cell comprising a nucleic acid molecule encoding said polypeptide; and

(b) recovering the polypeptide from the cell culture.

57. (new) A composition comprising the polypeptide of claim 52 and a carrier.